



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Larry A. Coldren *et al.*

Examiner: Phillip Nguyen

Serial No. 09/934,791

Group Art Unit: 2828

Filed: 08/21/2001

Docket No. 58027-012900

Title: HEAT SPREADING LAYERS FOR VERTICAL CAVITY SURFACE EMITTING LASERS

CERTIFICATE UNDER 37 CFR 1.8

I hereby certify that this correspondence and identified enclosures are being deposited with the United States Postal Service, first class mail, postage prepaid, under 37 C.F.R. 1.8 on the date indicated, and is addressed to the Commissioner for Patents, Washington, D.C. 20231 on January 24, 2003.

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AMENDMENT

BOX: PATENT APPLICATION  
Commissioner for Patents  
Washington, D.C. 20231

Sir/Madam:

Responsive to the Office Action mailed October 24, 2002 kindly enter the following amendments:

IN THE CLAIMS

The originally filed claims, after claim 26, are amended to correct the claim numbering issue. Specifically, originally filed claims (after claim 26) 23, 27, 28, 29, 30, and 31 are renumbered to 27, 28, 29, 30, 31, and 32 respectively.

Please amend claims 1-4, 6-19, and 21-32.

1. (Amended) A method for reducing the temperature in a vertical-cavity surface-emitting laser (VCSEL), the method comprising:

forming at least one heat spreading layer between an active layer and at least one reflecting surface in a VCSEL; and

permitting for reduction of the VCSEL temperature by allowing heat to bypass the at least one reflecting surface and pass through the at least one heat spreading layer.

2. (Amended) The method according to claim 1, including doping the at least one of the heat spreading layers with an n-type material.

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